

ORCHELIMUM, SERV.

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This genus of Orthoptera is confined almost entirely to North America, where it is represented by twenty or more species. Joseph Redtenbocher in his "Monographie der Conocephaliden," published in 1891, united *Orchelimum*, Serv., to *Xiphidium*, Serv. This action seems scarcely justified, as the two groups are quite as distinct as many other Orthopteran genera, and Redtenbocher's authority has not been generally recognized in this country. The species are distinguished with difficulty and the descriptions are widely scattered. These considerations have led me to attempt to make a key for their identification. It is quite possible that some of the species indicated are synonymous, but I am inclined to believe that all I have recognized are good, and I believe there are a considerable number undescribed. Many forms which differ from each other by very few structural differences are distinguished by some peculiarity of song or habit or habitat, and it is certain that a considerable number of them have been overlooked.

KEY TO ORCHELIMUM.

- A. Hind femora not armed with small spines on the under side.
- b¹. Ovipositor straight or very slightly curved; face not striped medianly, pale.
 - c¹. Tegmina surpassing the tips of the femora more or less. Length of the ovipositor 10 mm. or more, little if any less than two-thirds the length of the hind femora.
 - d¹. Pronotum short, less than one-fourth the length of the body and not more than 4 mm. long; tegmina only slightly surpassing the tips of the hind femora; a broad reddish-brown band upon the head and pronotum, somewhat paler in the middle. . . . *Delicatum*, Bruner.
 - d². Pronotum longer, more than one-fourth the length of the body and more than 4 mm. long; tegmina little if any shorter than the wings and reaching almost to the tip of the ovipositor; two well-defined narrow dark brown diverging lines upon the pronotum. . . . *Gladiator*, Bruner.
 - c². Tegmina not reaching the tips of the hind femora; ovipositor brown, much less than 10 mm. long. . . . *Minor*, Bruner.

b². Ovipositor decidedly curved.

c¹. Size small, less than 14 mm.; tegmina without the two black lines usually present on either side of the speculum..... *Gracile*, Harr.

c². Size medium or large, at least 16 mm. long.

d¹. Face pale or unicolorous, never with reddish-brown or fuscous stripe down the middle.

e¹. Hind femora short, less than five-sixths the length of the body and not exceeding 15 mm. in length.

f¹. Tegmina not much exceeding the hind femora; ovipositor less than 9 mm. long; posterior margin of the lateral lobes strongly sinuate; anterior and middle tibiæ green or yellowish..... *Vulgare*, Harr.

f². Tegmina far surpassing the tips of the hind femora; ovipositor more than 10 mm. long; posterior margin of the lateral lobes of the pronotum distinctly but not strongly sinuate; anterior and middle tibiæ fuscous black..... *Robustum*, Red.

e². Hind femora longer, at least five-sixths as long as the body and not less than 17 mm. in length; ovipositor less than half as long as the hind femora.

f¹. Pronotum longer, more than one-fourth as long as the body; tegmina not far surpassing the tip of the hind femora.

g¹. Tegmina not narrowed in the middle; anal cerci of the male slender, the basal tooth short and weak; tegmina and wings olivaceous brown; size less than medium..... *Campestre*, Blatchley.

g². Tegmina narrowed in the middle; anal cerci of the male swollen, armed within with a strong basal tooth; posterior margin of the lateral lobes of the pronotum strongly sinuate; size greater than medium. *Glaberrimum*, Burm.

- f². Pronotum short, less than one-fourth as long as the body; tegmina far surpassing the tip of the hind femora and distinctly shorter than the wings. *Longipenne*, Scudd.
- d². Face with a reddish-brown stripe down the middle; pronotum short, less than one-fourth the length of the body; ovipositor less than one-half the length of the hind femora; body slender.
- e¹. Stripe broadly expanded on the lower half of the face, forming a triangular spot; tegmina brownish-green or testaceous. *Concinnum*, Scudd.
- e². Stripe not expanding on the lower part of the face; tegmina and wings transparent whitish tinged with green on the principal veins of the lateral field. *Indianense*, Blatchley
- A². Hind femora armed with one or more small spines on the under side.
- a¹. Tegmina not much longer than the body, generally plainly shorter; ovipositor decidedly curved and never more than 9 mm. long.
- b¹. Face pale, without a narrow median stripe.
- c¹. Tips of the hind femora surpassed by the tegmina.
- d¹. Dorsal stripe present; ovipositor exceeding half the length of the hind femora; pronotum more than one-fourth the length of the body. *Sylvaticum*, McNeill.
- d². Dorsal stripe absent; ovipositor less than half the length of the hind femora; pronotum less than one-fourth the length of the body. *Spinulosum*, Red.
- c². Tips of the hind femora not reached by the tegmina, which are decidedly shorter than the body; pronotum considerably more than one-fourth the length of the body. *Cuticulare*, Serv.
- b². Face with a narrow median stripe *Agile*, DeGeer.
- a². Tegmina considerably longer than the body.
- b¹. Ovipositor not more than 9 mm. long and decidedly curved.
- c¹. All the tibiæ black or infuscated on the upper side; ovipositor plainly more than half the hind femora;

- pronotum not less than one-fourth the length of the body ; dorsal stripe present, though frequently obsolete posteriorly *Nigripes*, Scudd.
- c². All the tibiæ not black nor infuscated on the upper side ; ovipositor distinctly less than half the length of the hind femora ; pronotum less than one-fourth the length of the body ; dorsal stripe wanting *Nitidum*, Red.
- b². Ovipositor at least 10 mm. long.
- c¹. Hind femora spined only on the outer carina of the under side ; ovipositor nearly straight.
- d¹. Tegmina not more than 25 mm. even in the female, much less in the male ; general colour brownish-green ; dorsal stripe bordered by two narrow lines of darker brown . . *Bruneri*, Blatchley.
- d². Tegmina not less than 25 mm. long even in the male, much more in the female ; tegmina strongly reticulate ; the anal area forming a distinct angle with the lateral field *Volantum*, McNeill.
- c². Hind femora spined on both carinæ of the under side ; ovipositor distinctly curved ; dorsum of the pronotum with two reddish-purple stripes ; pronotum less than one-fourth the length of the body . . . *Laticauda*, Red.

ORCHELIMUM DELICATUM, Bruner.

Orchelimum delicatum, Bruner. Ent. News, III., 264, Dec., 1892.

“ *gracile*, Bruner. CAN. ENT., XXIII., 70.

Not “ “ Harr.

This species was re-named by Bruner when he found it necessary to restore Harris's *O. gracile*, which on the authority of Scudder had been considered a synonym of *Xiphidium fasciatum*, De Geer.

It is very limited in distribution, being known only from Nebraska, where, however, Bruner says it is “ quite common in the vicinity of West Point, about the margins of ponds, etc.” He also took it at the electric light in Lincoln.

ORCHELIMUM GLADIATOR, Bruner.

Orchelimum gladiator, Brun., CAN. ENT., XXIII., 71.

“ “ Blatchley, Proc. Ind. Acad. Sci., 1893.*

Nebraska, “On the flowers of a prairie golden-rod (*Solidago rigida*, L.), at West Point,” Bruner; Indiana, “From the borders of a tamarack swamp,” Blatchley.

ORCHELIMUM MINOR, Bruner.

Orchelimum minor, Bruner, CAN. ENT., XXIII., 72, Apr., 1891.

Apparently a rare species, known only from the District of Columbia. It is unknown to me and has not been recognized since it was named.

ORCHELIMUM VULGARE, Harr.

Orchelimum vulgare, Harr., Ins. Inj. to Veg., p. 162, fig. 77, 1862.

“ “ Scudd., Mat. for Mon., 452, 1862.

Xiphidium agile, Red., Mon. der Con., 186, fig. 80, 1891.

It is very probable that many of the references to this insect are mistaken. It seems to range over the northern United States from the Pacific to the Atlantic, and northward for an unknown distance into British America. It is found as far south as Arkansas and Maryland.

ORCHELIMUM GRACILE, Harr.

Orchelimum gracile, Harr., Ins. Inj. to Veg., 1862, p. 163, fig. 78.

“ “ Brun., Ent. News, III., Dec. 1892, 264.

Not *Xiphidium fasciatum*, Scudd., Mat. for a Mon., 1862, 451.

According to Bruner, Scudder was mistaken in referring *O. gracile* to *X. fasciatum*. Massachusetts, Harris; New Jersey, Bruner.

ORCHELIMUM ROBUSTUM, Red.

Xiphidium robustum, Red., Mon. Con., 185, 1891 New Orleans, Redtenbocher.

ORCHELIMUM CAMPESTRE, Blatchley.

Orchelimum campestre, Blatch., Proc. Ind. Acad. Sci., 133, 1893.

Reported from Vigo and Fulton Counties, “In upland prairie meadows, where it frequents the tall grasses, usually in company with *Xiphidium strictum*,” Scudd.”

ORCHELIMUM GLABERRIMUM, Burm.

Xiphidium glaberrimum, Burm., Hand., II., 3, 707, 1839.

*The title page of the author's reprint bears the date 1892, but it is evident that this paper was not printed until 1893 or later, as some of the synonymy given bears the date 1893. (See page 135.)

Orchelimum glaberrimum, Scudd., Mater. for a Mon., 453, 1862.

Xiphidium " Red., Mon. der Con., 187, 1891.

The whole United States east of the Rocky Mountains.

ORCHELIMUM LONGIPENNE, Scudd.

Orchelimum longipenne, Scudd., Mat. for a Mon., 453, 1862.

Xiphidium inerme, Red., Mon. der Con., 187, 1891.

Texas, Redtenbocher, Scudder; Kansas, Nebraska, Bruner.

ORCHELIMUM CONCINNUM, Scudd.

Orchelimum concinnum, Scudd., Mat. for a Mon., 452, 1862.

? " *herbaceum*, Serv., Hist. Nat. Orth., 524, 1839.

Xiphidium concinnum, Red., Mon. der Con., 188, 1891.

Blatchley says: "It frequents the weedy and grassy margins of marshes and lowland ponds and reaches maturity about August 15th." Massachusetts, Scudder, Redtenbocher; New York, Beutenmüller; Indiana, Blatchley; Illinois, McNeill; Nebraska, Bruner.

ORCHELIMUM INDIANENSE, Blatch.

Orchelimum Indianense, Blatch., Proc. Ind. Acad. Sci., 137, 1893.

Blatchley says it was "quite common among the rank grasses and sedges about the margins of a tamarack swamp near Kewana, Fulton County, Indiana.

ORCHELIMUM SYLVATICUM, McNeill.

Orchelimum sylvaticum, McNeill, Psyche, 26 Feb., 1891.

" " Blatch., Proc. Ind. Acad. Sci., 136, 1893.

Found on corn and about open places in the woods. Blatchley says: "It frequents the borders of cultivated fields and open woods." Illinois, McNeill; Indiana, Blatchley.

ORCHELIMUM SPINULORUM, Red.

Xiphidium spinulorum, Red., Mon. der Con., 189, 1891. North Carolina, Redtenbocher.

ORCHELIMUM CUTICULARE, Serv.

Orchelimum cuticulare, Serv., Hist. Nat. Orthop., 523, 1839.

Xiphidium cuticulare, Red., Mon. der Con., 189, 1891. Texas, Redtenbocher.

ORCHELIMUM AGILE, De Geer.

Locusta agilis, De Geer., Mem., III., 457. Pl. 40, Fig. 3, 1778.

Orchelimum agile, Scudd., Mat. for a Mon., 453, 1862.

Not *Xiphidium agile*, Red., Mon. der Con., 186, 1891.

There is considerable uncertainty concerning the status of this species. Redtenbocher made *O. vulgare*, Harr., a synonym, but Blatchley points out that Redtenbocher's measurements do not agree with those of *vulgare*. The species as determined by Scudder, as it is represented in my collection, has the under sides of the hind femora spined. Maryland, Illinois, Scudder; Kansas, Nebraska, Bruner; Montreal, Canada, Caulfield; New Jersey, Smith; New York, Beutenmüller.

ORCHELIMUM NIGRIPES, Scudd.

Orchelimum nigripes, Scudd., Ent. Notes, IV., 62, 1875.

Xiphidium nigripes, Red., Mon. der Con., 188, 1891.

The range of this species seems to be from the Rocky Mountains to Indiana, and Texas to Nebraska. It has not been reported east and south of the Mississippi and Ohio.

ORCHELIMUM NITIDUM, Red.

Xiphidium nitidum, Red., Mon. der Con., 189, 1891.

Georgia, Redtenbocher.

ORCHELIMUM BRUNERI, Blatch.

Orchelimum Bruneri, Blatch., Proc. Ind. Acad. Sci., 139, 1893.

This species is apparently closely related to my *O. volantum*, and it may prove identical. Said by Blatchley to be "common on the leaves and stems of a tall, broad-leaved knot-weed (*Polygonum amphibium*), which grows luxuriantly in the shallow waters about the margins of two or three large ponds in the Wabash River bottoms." The same authority reports it from the margin of Lost Lake, Marshall Co., Ind.

ORCHELIMUM VOLANTUM, McNeill.

Orchelimum volantum, McNeill, Psyche, VI., 26, Feb., 1891.

Found only on *Sagittaria variabilis*, in a single locality on the banks of Rock River, Illinois, near Cleveland, Henry County. It makes more use of its remarkably long wings than any other species of the genus known to me.

ORCHELIMUM LATICAUDA, Red.

Xiphidium laticauda, Red., Mon. der Con., 190, 1891.

New Orleans, Redtenbocher.